

WHAT IS CLAIMED IS:

1. A stack structure of a fuel cell, comprising:

a plurality of separators of a fuel cell; and
a protruding portion which is formed on an end portion of each of the
5 separators, and the protruding portion has a tip portion that contacts a reference
portion of an assembly jig during assembly of the fuel cell.
2. The stack structure according to claim 1, further comprising:

a plurality of cells each of which comprises the separators and an
10 Membrane-Electrode Assembly, wherein the protruding portion protrudes in a
direction perpendicular to a cell stacked direction.
3. The stack structure according to claim 2, further comprising:

a plurality of sealants each of which is provided between the separator
15 and the separator, or between the separator and the Membrane-Electrode Assembly
when the cells are stacked, wherein the protruding portion has a predetermined height
such that the sealant does not come out from the tip portion.
4. The stack structure according to claim 3, wherein the predetermined
20 height of the protruding portion is 0.3 mm or more.
5. The stack structure according to claim 2, wherein the protruding
portions of the separators adjacent to each other are formed so as not to overlap with
each other in a cell stacked direction.
- 25 6. The stack structure according to claim 2, wherein the protruding
portions of the separators adjacent to each other are formed so as to be displaced with
respect to each other in the cell stacked direction.
7. The stack structure according to claim 1, wherein each of the
30 separators has a rectangular shape, and the protruding portion is formed in a vicinity
of a corner portion of the separator.

8. The stack structure according to claim 1, wherein a plurality of the protruding portions is formed on each of the separators.

5 9. The stack structure according to claim 1, wherein a cross section of the protruding portion is substantially circular in a direction perpendicular to a cell stacked direction.

10 10. The stack structure according to claim 1, wherein a cross section of the protruding portion is substantially rectangular in a direction perpendicular to a cell stacked direction.

11. The stack structure according to claim 1, wherein the protruding portion protrudes toward an outside of the separator.

15 12. The stack structure according to claim 1, wherein the protruding portion protrudes toward an inside of the separator.

20 13. The stack structure according to claim 1, further comprising:
a gas passage formed in each of the separators and extends in the cell stacked direction, wherein the protruding portion is formed on a wall surface of the gas passage.

25 14. The stack structure according to claim 1, wherein circumferences of the separators adjacent to each other are different.

15. The stack structure according to claim 14, wherein a curved surface or a chamfer is formed on an end surface of each of the separators.

30 16. The stack structure according to claim 1, wherein the end portions of the separators adjacent to each other form a step portion.

17. A stack structure of a fuel cell, comprising:

a plurality of cells each of which comprises separators and an Membrane-Electrode Assembly; and

5 a protruding portion which is formed on an end portion of each of the separators so as to protrude in a direction perpendicular to a cell stacked direction, and which is formed so as not to overlap with the protruding portion of the adjacent separator in a cell stacked direction .

10 18. The stack structure according to claim 17, wherein circumferences of the separators adjacent to each other are different.

19. The stack structure according to claim 18, wherein a curved surface or a chamfer is formed on an end surface of each of the separators.

15 20. A manufacturing method of a stack structure of a fuel cell, comprising the steps of:

preparing a plurality of separators of the fuel cell, each of which has a protruding portion on an end portion thereof;

20 preparing an assembly jig which is used during assembly of the fuel cell;

stacking a plurality of the separators while making a tip portion of the protruding portion of each of the separators contact a reference portion of the assembly jig.

25 21. The manufacturing method of the stack structure according to claim 20, wherein a sealant which is an adhesive agent is applied to each of the separators in advance.